

ABSTRACT

A new Fault Detection and Exclusion (FDE) approach for tightly integrated GPS/inertial sensors that combines a normalized solution separation for fault detection and a residual monitoring scheme for fault exclusion is described. The computation of the detection threshold, the horizontal protection level and the horizontal uncertainty level are also presented. This new FDE algorithm is designed to enable the tightly integrated GPS/inertial sensor to be used as a primary means of navigation sensor for civil aviation.